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LAND OF THE SMOKIES

WILLIAM W. BURCHFIEL, JR.
University of North Carolina, Chapel Hill, N.C.

Astride the Tennessee-North Carolina border lies one of America's most precious natural possessions—the Great Smoky Mountains National Park. This park casts a spell of mystery and enchantment upon all visitors. With northern flora, western game, southern hospitality, and eastern influence, it offers tourists an unsurpassed all-season climate, rare mountain scenery, and varied recreational facilities. It is without a doubt the wildest and most picturesque highland east of the Rockies. Even today there are "gulfs" in the Smokies that no man has ever penetrated. From the lush vegetation of the deep valleys and extending to the very top of the rugged mountain peaks, there rises a tenuous haze, of deep blue color, from which the mountains acquire their name. This mist often becomes so dense that one can see but a short distance, as the rim of the earth seems to encroach upon the horizon.

LAND ACQUISITION

With an area of over 480,000 acres, about three-fourths the size of the State of Rhode Island, it is the largest national park ever established by purchasing land from private owners. The Laura Spelman Rockefeller Memorial gave $5,000,000, matching equally the amounts received from all other sources. To complete additional land purchases, $2,250,000 was provided by Congress, plus a presidential allotment of $1,560,000.

The Great Smoky Mountains Conservation Association was organized in 1923 under the leadership of Colonel David C. Chapman and W. P. Davis of Knoxville, Tennessee. Their purpose was to create the park and promote its development. During 1923-24 a small group labored with unceasing effort to make this project a reality. By 1925, people in Tennessee and North Carolina had be-

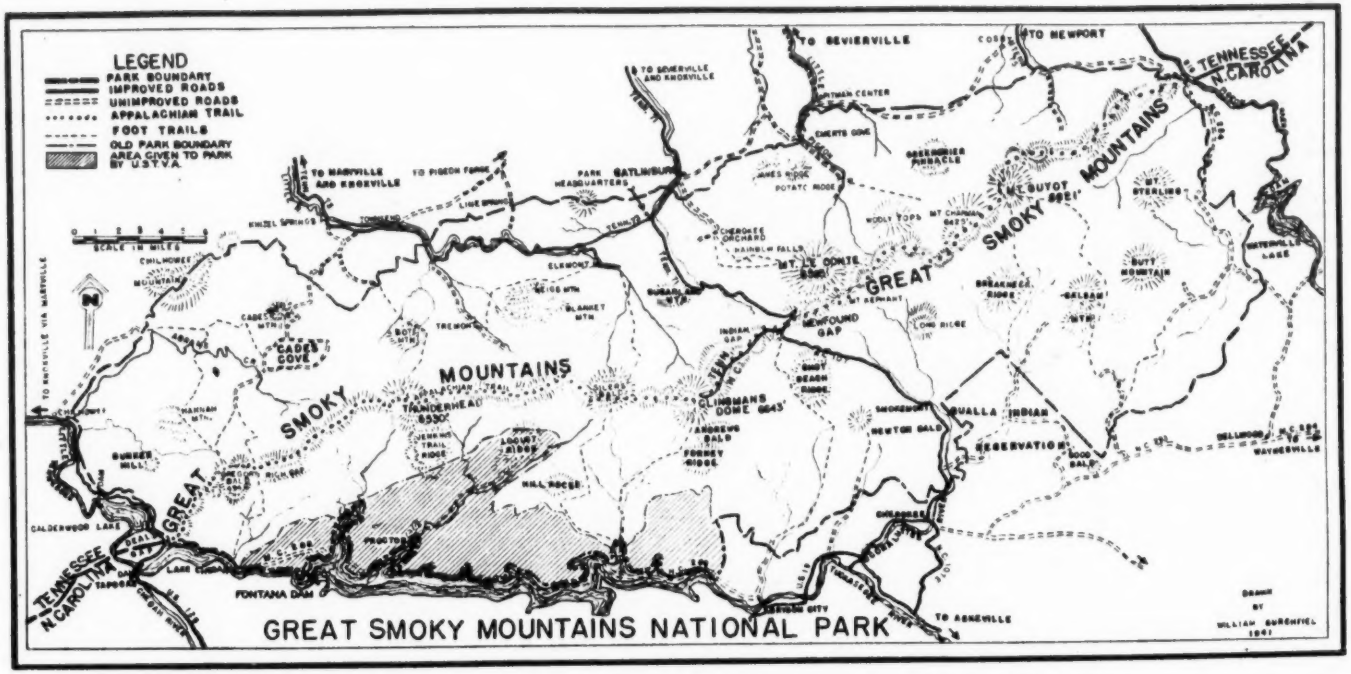

Fig. 1. With over 480,000 acres, the Great Smoky Mountains National Park is the largest park ever established by purchasing land from private owners. Courtesy of National Park Service.

come interested in the undertaking. Within the space of a few weeks, nearly a million dollars were subscribed by individuals and business firms thruout Eastern Tennessee and Western North Carolina. The following year Congress passed an act which gave the southeastern states their first two national parks—Shenandoah and Great Smokies. The latter park was dedicated September 2, 1940, by the late President Franklin D. Roosevelt.

Cool Retreat from Summer Temperatures

Unpleasant variations in temperature are practically unknown in the Smokies. When nearby cities are sweltering under the mid-day sun, vacationists in the park may enjoy cool mountain glades, swimming and fishing in sparkling trout-filled streams, or hiking thru a quiet forest on wooded upland trails. Nights are always cool. Few are the mid-summer nights when one can sleep comfortably without blankets. Winter temperatures are mild. Mosquitoes are practically unknown, since swift flowing streams prevent their breeding. In as much as there is no entrance fee to the park, the use of camping grounds is free.

Wild Animals in Their Natural Habitat

One of the most fascinating features of the Smokies is the opportunity afforded visitors to meet face to face wild animals such as their forefathers encountered a century ago. Wild life is given complete protection; hunting and trapping are not permitted. Since the park was established, such animals as black bear, white-tail deer, red and gray fox, bobcat, wild turkeys and ruffed grouse have multiplied many fold. More than 50 species of fur-bearing animals, over 200 birds, 34 reptiles, and 60 fishes are known to thrive there. Such animals as the squirrel and fox increase to a certain point, and then the excess is eliminated by epidemics of various diseases. Larger animals, such as deer and bear, continue to increase in number, since there are few diseases affecting their death rate. They solve the problem of protecting their hunting grounds in a manner similar to that of the Indians. During the breeding season male bears establish certain areas as their own, and will challenge other bears intruding on their premises. Male bears have a habit of standing upright against a tree and clawing the bark at the greatest height they can reach. When another bear sees the "mark," he repeats the performance. If he cannot out-

stretch the first bear, he usually departs from the scene without a brawl. Frequent glimpses of deer, fox, and wild turkey add much to the pleasure of a park trip.

Mountain streams are ideal for game fish. More than 700 miles of these swift, clear streams are stocked with rainbow trout, and small-mouth bass. The latter are the dominant fish of the Smokies. Speckled trout are found in the head-water creeks, while rainbow trout prevail farther down the streams. Great abundance of natural food and cool aerated water combine to make this area exceptionally suitable for rapid reproduction. The Park Service plans to provide still better fishing thru a vast restocking program. Each year between 300,000 and 600,000 fish, ranging from three to eight inches in length, are liberated in the park streams. They are hatched and kept in rearing pools until they have reached a desired size. Fishing within the park commences May 16 and terminates August 31 each year, while outside the boundaries, the fishing season is extended somewhat longer. All anglers are required to have state fishing licenses in either Tennessee or North Carolina, depending upon where the fishing is done. The use of live bait is prohibited. Size and number of catch per day are specified and these regulations are strictly enforced by alert park rangers.

A Vast Botanical Garden

The Southern Appalachians have long been recognized by plant geographers as one of the most outstanding centers of vegetation in the entire world because of the high annual rainfall, excellent drainage, and long growing season. The late Dr. H. M. Jennison, botanist of the University of Tennessee, found 147 different varieties of trees growing under natural conditions in the park. This large number of trees becomes most significant, when viewed in comparison with a total of only 85 kinds that grow naturally on the whole continent of Europe with an area that is 5,000 times larger. To bring the comparison closer home, the Shenandoah National Park, in Virginia has only 75 varieties of trees compared to the 147 in the Smokies. Some of the Western parks have less than 20 different varieties. These comparisons give a true picture of the highly varied flora found here. However, it should be pointed out that a few of these species may not properly be classed as native, altho all of them are growing and reproducing and will eventually become permanent members of the Great Smoky plant

life. Just how each of these was introduced, and when, is not known in most cases no doubt, some were planted by the early settlers.

High mountains, low valleys and deep-cut gorges serve to give a great variety of ecologic conditions for the trees, shrubs and wild flowers. The extremely rugged terrain of this region has made the cutting of timber so unprofitable that part of the virgin forest has been retained. A National Park Service Bulletin states that this is the Nation's largest, finest, and most beautiful hardwood forest.

Variety is not confined to trees alone, for flowering shrubs and

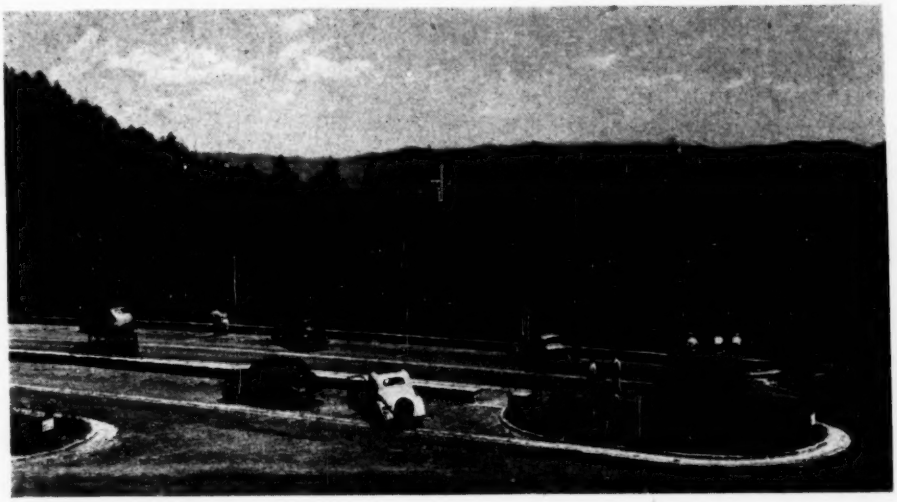

Fig. 2. Hundreds of thousands of motorists pause each year at Newfound Gap a mile above sea-level to admire the sweeping views into Tennessee and North Carolina. Courtesy of National Park Service.

wild flowers are equally varied. Dr. Jennison listed more than 1,500 flowering plants inside the park. The "King" of the flowering shrubs is the rhododendron. There are extensive areas covered with mountain laurel, flame azalea, dog-hobble, allegheny myrtle, and numerous other shrubs. Late April finds the spring flowers, including the abundant dogwood, at their blossoming peak; May is ideal for the mountain laurel. Middle June is best for flame azalea and pink rhododendron. Early July is likely to be the peak for the famous white rhododendron's flowering. Some of these luxuriant shrubs are found at high altitudes, while others linger in the valleys and on the peaks alike. Blooming dates will vary slightly with the altitude. Azaleas probably have the longest blooming season of any of the mountain shrubs.

HIGHWAYS ABOVE THE CLOUDS

A network of all-season highways extends into the park at various points. The most popular one is a smooth, paved boulevard, Tennessee route 71 and North Carolina route 107 leading from Gatlinburg, Tennessee, across high elevations at Newfound Gap to Cherokee, North Carolina. This roadway affords an exceptional opportunity to view the grandeur of the Great Smokies. Precipitous mountains rise from the deep-cut Little Pigeon River gorge thru which the road winds as it climbs skyward along an easy grade. The first few miles pass thru a section that was once cultivated but is now rapidly reverting to forest. One may still see a few cabins on the mountain side. The lower stretch of the road affords many impressive views of majestic Mt. LeConte on the northeast side and Chimney Tops on the southeast. Just before reaching the base of the Chimneys the road passes thru the first of two tunnels and enters virgin soft-wood forests, with stately hemlocks that seem to purify the cool, moist air. The highway sweeps around the side

Fig. 3. Man has carved his way thru mountains of granite in order that distance may be shortened between points of interest. Courtesy of National Park Service.

of the mountain until it comes to an unusual engineering feature, known as the "loop-over," where it winds thru an underpass and then swings around to cross over the same bridge, making a complete circle. After a few more miles the highway leaves the stream and meanders back along the flanks of the mountain, passing thru another tunnel before it reaches the main divide at Newfound Gap. At various points along this route are beautiful stone walls con-

Fig. 4. Rushing streams and hungry trout, the dream of all anglers. Courtesy of National Park Service.

structed of native rock. This eighteen mile climb, ascending more than 3,700 feet, requires about 45 minutes. From Newfound Gap with its elevation of 5,025 feet, one can look down to glimpse the road that he has just traversed. As it winds its way up the narrow gorge, cars on it appear like ants crawling along a tiny path. From here the serpentine stream below can barely be seen. To the northwest are the cathedral spires of the Chimney Tops, which loomed high above the highway a few minutes earlier, but now resemble a steep pinnacle in the abyss below. In a view to the north, one can

see Mt. LeConte standing out like a shepherd watching his flock. In all directions are panoramic views of new jagged mountains with all their profuse colors of blue, green, and purple.

From Newfound Gap a 40 foot paved highway, better known as the "Skyway," has been built to Clingman's Dome. At intervals along this seven and one-half mile drive picnic sites and parking areas have been constructed to afford the motorist an opportunity to pause and enjoy the breath-taking vistas. This is the highest roadway in eastern United States. Drifting clouds frequently rush thru mountain gaps, creating a vivid sensation similar to that of traveling on a "Magic Carpet."

After viewing the panorama from Clingman's Dome, one must retrace his steps back over the same road to Newfound Gap before driving down the North Carolina side of the mountains into the adjacent Cherokee Indian Reservation. Pottery, baskets and other Indian handicraft articles are for sale, and the Indians frequently stage ceremonial dances, pageants, archery and blow-gun contests for visitors. After leaving the reservation, the highway connects with main routes leading to Asheville and Atlanta.

INDEPENDENT MOUNTAINEERS OF STURDY ANCESTRY

Former President Herbert C. Hoover once spoke of the people of the Great Smoky Mountains as being, "the seed-corn of the nation." This statement fits the people perfectly. They are people without annals, for they have little knowledge of their ancestry beyond their grandfathers. A large proportion of these settlers were of mixed extraction coming from the countries of Western Europe. English, Scotch-Irish, Irish, and German stock settled all along the mountain slopes. These sturdy people have literally carved an existence out of the most formidable wilderness East of the Mississippi River. Why did these early pioneers seek such an isolated spot to live? Some came to live where isolation made for a higher degree of freedom and independence; others came to escape religious persecution and start life anew; still others came to establish homes and to claim large stakes of land; and a few came purely from wanderlust.

The mountaineers are homogeneous as far as manners, experiences, speech and ideals are concerned. These pioneers were isolated from each other and from the outside world until a few years ago by geographic boundaries, and they have no such coherence

among themselves as would come from common leadership or a sense of common origin and mutual dependence. This has been called "The Land of Do Without," a completely true statement. Articles that could not be produced at home were not used. Only those commodities that were grown and prepared by the mountaineers were consumed. For more than a century the people have lived simple lives with little or no change. They made their own laws, followed their own customs and traditions until the beginning of the twentieth century.

Fig. 5. Chimney top, the gibraltar of the Smokies, is covered with mountain laurel, flame azalea and dozens of other flowering shrubs, which in season, color and landscape. Courtesy of National Park Service.

The mountaineer is lean, shrewd, clever, and strongly individualistic. He is healthy, and as a rule, long-lived. Girls are often grandmothers at the age of forty. The tall gangling boy reaches maturity almost overnight and changes very little until he reaches the age of forty-five or fifty; then suddenly, he turns into middle-age with graying hair, acquiring a slower pace, and perhaps a homemade cane.

The man of the mountains in the post-war world will be brought face to face with a mighty change. He will no longer be isolated from the outside world. After more than a century of simple existence, the family's pattern of living is being altered. What is

bringing about this change? More and more highways are penetrating the mountains, carrying with them new modes of living, and new consumer goods, resulting in the break-down of mountain culture. War veterans on returning home relate their experiences in Paris subways, New Guinea jungles, Icelandic glaciers, and Italian wine cellars to stir the imaginations of their friends. The man of the mountains now finds himself in the currents of human progress.

Today a few typical mountain communities still remain intact within the Great Smokies, and these will undoubtedly constitute valuable outdoor exhibits in a proposed "museum of mountain culture." A large collection of homemade furniture, tools, farm equipment and weapons has been assembled. For several years, the English and Sociology Departments of the University of Tennessee have conducted studies of Great Smokies ballads, folklore, linguistics, genealogy and local traditions. These cultural research studies are planned to present a regional picture of native life in the Great Smokies.

MOUNTAIN CRAFT

This national park presents a unique opportunity to preserve frontier conditions of a century ago, which have long ago vanished elsewhere. The cultural and human-interest aspects are as outstanding as its scenery and vegetation. With the coming of tourists, the mountain folk found a market for the articles they made. Some of the tourists were interested in handicrafts as souvenirs, but others sought articles that had artistic value as well as practical usefulness. This was especially true of hand-woven fabrics, baskets, matched wood novelties, and homemade furniture. This new market encouraged many descendants of the hardy pioneers to devote a major part of their time to preparing handicraft merchandise.

Weaving, furniture making, general woodwork, and basket making are taught at the Pi Beta Phi Settlement School at Gatlinburg. This school helps the native artisans to select more attractive patterns for their weaving and other articles. It also encourages the craftsmen to keep the quality up to a high standard and yet sell their articles at a reasonable price.

WHERE MILLIONS COMMUNE WITH NATURE

Most of the nation's great recreational areas are remote from centers of population. They are inaccessible to the casual vaca-

tionist of the East who has only moderate means and limited time. The Smokies, however, are within a ten hour drive of 60 million Americans. Altho five of the Western parks are larger in area and many of them have been established longer with more complete development, the Great Smokies have for a five year period drawn a much larger attendance than have any of the Western parks.

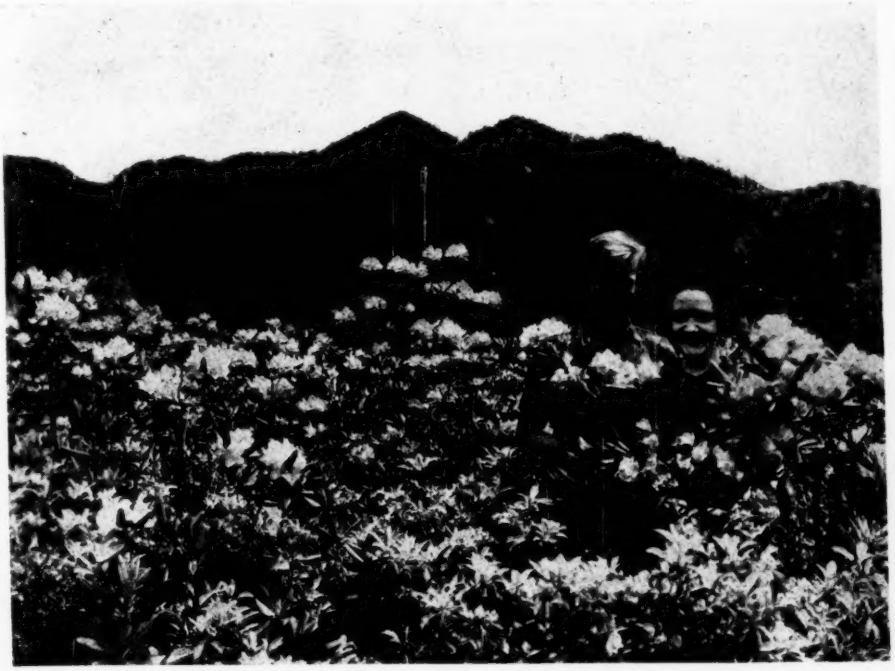

Fig. 6. White rhododendron in full bloom near Newfound Gap in early July. Courtesy of National Park Service.

During the last normal year, 1941, there were more than 1,188,000 visitors to this the greatest of all national parks.

Tourist Havens in Mountain Setting

Accommodations for visitors to the Great Smokies have kept pace with an ever increasing flow of travel. New hotels and cottages are being constructed each year thruout the region. Gatlinburg, largest village adjacent to the western park entrance, has a population of some 2,000 people. It can accommodate more than 2,800 visitors each night in four hotels, in a number of picturesque cottages, and in private homes. This village is unique in that all

hotels, cottages, shops and other business are owned and operated by local mountain folk. It is also distinctive in that many of its buildings are built of native material, including field stone, hewn logs, and split shingles which afford an unusually attractive appearance. Other attractive tourist facilities are located at Elkmont, Bryson City and Cherokee.

CONCLUSION

The city dweller of the East with but a brief holiday period, desirous of opportunity to relax and appreciate natural wonders, will find, within one or two days of his home, a sylvan paradise which merits his acquaintance; and once he has visited the Great Smoky Mountains National Park he will come again. The mounting thousands who pass thru the park each year are advertising the virtues of this retreat to people in every state in the Union. As the war has reached its conclusion and gasoline stations reopen along the highways, the Great Smokies can still anticipate even greater numbers of visitors than in the past, and increased development of facilities to care for them.

TEACHING SOIL IN THE LOWER GRADES

THOMAS F. BARTON
Southern Illinois Normal University

It is difficult for pupils and teachers to understand soil conservation and proper land use when one is not familiar with the characteristics of soil. I wonder how many pupils and teachers know the five ingredients that make up any good soil? They are: air, water, humus or organic compounds, living organisms, and mineral substances. No doubt, a large number of pupils graduate from the elementary school with more misconceptions than correct ones about this important resource. For example, many pupils, and some adults, too, believe that everything above bedrock is soil, that the only important ingredient in soil is mineral matter, and that man can readily replace soil. One could go on and on listing numerous other misconceptions.

College and university geographers in their study and teaching include soil as one of the eight primary physical features of the environment. Many teachers in the elementary grades on the other hand have not been adequately informed about this resource. Yet children must be taught the importance of saving and protecting soil. Some knowledge about soil is also a prerequisite to a clear discussion of wise land use.

Teachers and pupils can learn about soil together. It is the object of this paper to suggest simple and interesting methods and content which will prove practical for pupils, teachers and supervisors.

Basic Concepts

Before preparing or teaching a science unit on soil, the teacher should have in mind the concepts which she expects the pupils to obtain. Many teachers feel that they do not have sufficient knowledge of soil or experience in teaching the topic to prepare concepts. For them, the following list of basic concepts is suggested:

Group One:

- Plants grow in the soil
- Animals live in the soil.
- Food for animals and for us comes from the soil.
- Soil is found in flower pots, yards, gardens, and farms.

Group Two:

- Soil contains air, water, and food for plants.
- Plant roots furnish food and support.

There are different kinds of soil—rich and poor, light and dark, sandy and clayey.
All of our food comes directly or indirectly from the soil.
Farms are covered with soil.
Farmers make a living by raising things in soil.

Group Three:

Different plants grow best in different soils.
Soils covering the earth's surface are not alike.
The earth's soil layer is thin and can easily be carried away by running water and wind.
Sometimes plants use up all the plant food and man must put more food or fertilizers in the soil.
Farms can be worn out and destroyed by erosion.
Soils should be saved and protected because all of our food and clothing and part of our shelter comes from the soil.

The concepts listed above have not been assigned to any grade. It is probable that a unit on soil will not be taught until the second year. If soil is not taught until the third year the teacher may wish to rearrange the ideas into different groupings. However, if all the concepts suggested are understood by the pupils entering the fifth grade, conservation and geography teaching will be more effective.

Methods of Presenting Concepts

There are at least seven important methods by which geography may be successfully introduced to the child. These are: 1. Stories, 2. Experiments and Demonstrations, 3. Construction, 4. Field Trips, 5. Short Explanation, 6. Pupil Observation, Description, and Interpretation, and 7. Visual Aids.

The method used will vary with the phases of geography taught because they are not as applicable to one element of the physical environment as to another. For example, when teaching a unit on soil, one has an excellent opportunity to use the experiment and demonstration method. Yet this method is of less value when teaching landforms.

Time will not permit me to exemplify each of the methods suggested. Consequently, this paper will be limited to the first four methods.

Story Method—The Secret of Three Potatoes

Dick was tired and hungry. It was Saturday and he had played hard all morning. It was still too early for lunch. He looked around for a cool place to rest. "The basement steps is a nice place; it is quiet and cool there," he thought.

He had been resting there awhile when suddenly he heard strange voices. They seemed to be coming from the bag of potatoes on the steps beside him. The potatoes seemed to be quarreling.

"It is not my fault if I am small," cried a weak voice. "If you knew what kind of home I had, you would wonder how I grew to be as big as I am! I always have aches and pains!"

"Why do you have aches and pains?" asked a middle-sized potato.

"My home was in clay soil," the small one complained. "When I was very young, the soil was cold and wet. I was chilly most of the time. Instead of growing and getting larger and larger, I tried to hold myself together to keep warm. Then, one day the soil became dry and warm. I felt fine! I started to stretch and grow. Alas, a few weeks later the clay soil became hot and dry. The drier the soil became, the harder it got. I pushed and pushed out against the hard soil until my sides ached. Finally, one day, a boy came and dug me out of the ground. I was never to grow any bigger."

"I am sorry to hear that," said the middle-sized potato. "I am sorry I called you names. I, too, know what it means to have aching sides. Mine are sore from burns."

"From burns? How did that happen?" asked the small potato.

This is the story the middle-sized potato told: "My home was in a sandy soil. It was never damp or cold. When I was young, the sandy soil was warm, moist, and very comfortable. I grew rapidly. The soil pushed out from around me easily. Every week warm water ran down into my home. I was very happy in my home until the sandy soil became dry. Less and less warm water came into my home. Soon the water did not come at all! When no more water came, the sand became very hot. I couldn't stand it! It burned my sides!"

Then the large potato spoke up: "Now I know what a fine home mine was. I came from a loamy soil. It was always moist and warm. I never had too much water, or too little water. I always got just enough. I have never been cold or thirsty. While I was in the soil, I felt fine and grew rapidly. As I grew I could always push the soil out of my way. Now I see why I grew to be such a healthy large potato, larger than either of you."

Just then Dick heard his mother calling him for lunch. Guess what? It was all a dream about the potatoes talking.

Dick asked his father about the dream. Daddy explained that

part of the dream was true. Different soils produce different kinds of potatoes. Because of differences in soil, weather, and ground water, we have different kinds and sizes of potatoes. We have little potatoes, middle-sized potatoes, and big potatoes. We have Irish and sweet potatoes. How is the home of the Irish potato different from that of the sweet potato? Do you believe we can find the answer? Would you like to try?

EXPERIMENTS AND DEMONSTRATIONS

The following experiments and demonstrations may be altered or combined to fit varying circumstances. The exercises have been kept simple and easy. They may be used in any grade where the pupils have not previously received this type of presentation. Children in the elementary grades enjoy the experimental method of presenting subject matter.

Objective: To have pupils discover that air and water are two important ingredients in soil.

Put some good garden soil in a glass jar. Drop an earthworm on top of the soil. What does it do? After the earthworm has tunneled its way underneath, pour water into the jar until it is almost but not quite above the soil. What does the earthworm do? Why? Does this help to explain why after a heavy rain you often see earthworms crawling on the sidewalk and on top of the ground? Pour the water out of the jar. Put a few blades of green grass on top of the soil. Observe this for a few days. What happens?

Put three inches of dry garden soil into another jar. Quickly cover it with an inch of water. Where does the water go? As the water runs into the soil, what comes out? How do you know it does? Is air a part of good soil?

Take three potted plants, the same kind and size. Place each pot in a tin container. Keep water standing over the top of the pot in one container. Do not water the second potted plant at all. Water the third just right. What happens to the first plant? What happens to the second plant? What didn't the first plant get? Will standing water in a field kill crops such as corn or oats? What caused the second plant to die? Are air and water necessary parts of soil?

Objective: To show that soil particles vary in size.

In four pint fruit jars put samples of loam, clay, gravelly soil, and sandy soil, one sample in each, and take them to school. Have each jar about one-fourth full. Paste a different number on each

jar. Let the pupils examine the soils and try to identify them. Be sure the children do not mix the soils. Next, almost fill the jars with water. Have the children shake the jars vigorously. Shake until the soil is thoroly mixed with the water. Let jars stand for a day and shake again. Then let the jars stand undisturbed for several days. Have pupils watch jars from time to time. What happens? What is the material in the various layers? The soil with about equal parts of sand and clay is called loam. If any material floats, take it out and examine it, both with the naked eye and a magnifying glass.

Objective: To demonstrate that the speed in which water enters soils varies, and that soils also vary in their ability to hold water.

Fill four flower pots with the same amount of four different kinds of dry soil; namely, clay, sand, loam, and, if possible, soil from a compost heap. The pots should be about half full of soil, and make sure that the holes in the bottom of the pots are covered with screen wire. Fill the pots with water and have them resting over glass jars. Add the same amount of water to each pot until water drains thru all four pots. Which type of soil permits the water to soak thru the quickest? Which type of soil holds the most water? Which soil holds and stores most water for plants?

Objective: To have pupils realize that vegetable matter and living organisms are in soils.

Remove some moist soil from the garden or field and spread it immediately on a sheet of white paper. Examine it by rolling it around with a stick. What do you find? Classify the material as roots, partially decayed leaves and stems, insects, small stones, and sand, etc. Now, with a magnifying glass see if you find additional material. What kind of a soil is it? Rich or poor? Sandy or clayey?

Weigh an old pie tin. Put some unsorted soil in the tin and weigh again. Place the tin and soil over a burner. As the soil gets warm, cover it with a glass plate or jar. Where did the droplets of water on the plate or jar come from? Remove jar and heat the soil until it is a reddish color. Weigh the soil and pie tin again. How much weight did the soil lose? Why does it weigh less? After the burned soil is cool, feel it. How does it compare with some of the same unburned soil?

For two consecutive weeks keep a diary of all the animals and insects that you see living in the ground around your house, in a park, or woods. If there are loose boards, stones or bricks in your

yard or garden, look under them.

Objective: To make clear the need of mineral matter or plant food in the soil.

Plant some corn or grain seeds in two pots containing clean sand. Water the plants with the same amount of water but in the water for one dissolve a commercial fertilizer. What are the results? Why did the plants in the pot without the fertilized water grow only a short time?

Objective: To show that water will flow up thru the soil and that plants obtain water from the ground by such action.

Take three wide-necked jars—one pound Crisco jar for example. Label each with a number. In one jar place sandy soil, in another place gravelly soil and in a third place a loam soil. Be sure all soils are dry. Tie some burlap or several thicknesses of cheese cloth over the mouths of the jars. Then turn them over, placing each jar in a separate pie tin and pour the same amount of water into each pan. In which jar does the water move up thru the soil the quickest? Why is loam a good garden soil?

Why do some people water their house plants by allowing the pots to stand in water? Explain why it is better to allow the water to run up thru the soil rather than pouring the water on top and allowing it to run down.

Construction

Some people can learn more quickly with practical experience, that is, by using their hands, than they can with abstract ideas. Very stimulating results may be obtained if all pupils are occasionally given an opportunity to work with their hands. Moreover, a change in method often relieves an otherwise monotonous presentation.

In a soil unit, there are many possible activities for construction work. In this paper, I shall explain three. These are: 1) preparation of a window box for bulbs, 2) a compost heap, and 3) a small garden.

1. Flower box. The important thing in this activity is not the construction or installation of the box outside the window. It is to fill the box with the right materials in the right way and then observe developments. The window box as a teaching device is augmented if one side of it is glass protected by a removable board. Then in the spring when the bulbs start to grow, by removing the

board the pupils can see a vertical cross section of the plants. In this way the pupils may see a bulb, its roots, and its stem extending up thru the soil and unfold into a plant and flower above the ground.

The bottom of the box should contain good soil. Over this spread a layer of sand about an inch deep. In the sand plant the bulbs. Then cover the bulbs with good garden soil. If the soil is poor, better results may be obtained if a little commercial fertilizer is sprinkled over the sand. Explain that the soil must be loose and friable so the little plant can push its head up thru the soil in the spring. If some is available, mix material from a compost heap in with the soil. Have the pupils notice how loose the sand, soil, and compost material are. Explain why bulbs are planted in the fall, why sand is used, etc.

2. **Compost heap.** If at all possible give children the experience and opportunity of making a compost heap. This need not be large. A few square feet will be sufficient, will stimulate interest, and will teach them how soil may be improved. In the fall, place in an enclosure a layer of leaves and other vegetable matter. The enclosure may be made of woven wire or boards. Sprinkle lime on the vegetation and cover with about two inches of earth. Repeat this process several times and allow the heap to decay during the winter. The next summer or fall use this in the garden and/or flower box.

3. **Garden.** Some children have no interest in soil until they have gone thru the experience of planting seeds or bulbs and then anxiously waiting for the plants to appear. American children should have the opportunity of helping spade a garden, preparing a seedbed, planting seeds, and then watching their vegetables and flowers grow. The school garden need not be large. It may be only a plot of ground ten feet square but it will give the child an opportunity to work with soil and plants. When equipping a school, a small plot of ground to be used as a garden is often overlooked. Yet here, during its use, numerous science problems normally develop and can be explained.

Field Trips

In the study of soil, field trips should not be omitted. With young pupils several small trips are better than one large trip. The first trip may be taken after stories of soil, such as "The Secret of

Three Potatoes'' are read or told, and several experiments and demonstrations performed.

For example, when the ground is moist but not muddy, take a small field trip to observe the thickness, color and character of soil. At different places cut a ''plug'' from the earth like one would plug a watermelon. Examine the plug. How does the soil differ from top to bottom? If the material is all alike, take a sharp garden spade and push it straight down the length of the blade if possible. Pry up and throw the material over. Describe the cross section of the ground exposed in the wall of the hole. Evaluate the soil as to whether it is shallow or deep, loose or tight, dark or light, fine or coarse. If distinct layers are visible, have pupils make round ''mud'' balls from materials from each layer. Is the material that makes the best mud ball from the best part of the soil? Why? Be sure to make several ''plug'' tests—one along a fence row, another in a garden, and a third where much or all of the top soil is washed away.

On another field trip cut a piece of sod six inches square and show the pupils the great network of roots holding the soil together. Then study places where the soil is protected or unprotected. Point out examples of soil erosion.

Other field trips can be developed to fit the local situation.

Conclusion

The writer feels that soil conservation and wise land use are fundamental problems in our country today. However, in a democratic society, people must understand problems before they can act wisely. Some knowledge of soil is necessary before pupils or adults can comprehend soil conservation problems or geography of a region. It is hoped that the materials suggested will not only encourage teachers to offer a soil unit but will help implement the teaching of the unit.

HISTORICAL MAPS AND SEAPOWER

CARL G. GUSTAVSON
Ohio University

During the Second World War the limits of effective domination by American armed might have been pushed westward from the Hawaiian Islands to cover an area several times greater than that of the continental United States. The peacetime periphery of our control will abut squarely on the land borders of the Asiatic nations. In terms of power-politics, one might paraphrase Richard Olney and declare that "The United States is practically sovereign on this ocean and its fiat is law."

Contrast this situation with the one which will be depicted on postwar political maps: a multitude of pinpoint islands, with here and there a tiny "U.S.A." appended to indicate that American sovereignty exists over some few square miles of land. Around the individual island will stretch the neutral blue of the world's largest ocean, overwhelming the minute evidences of our paramountcy in the Pacific.

Such an example suggests how maps sometimes contribute to distorted conceptions of international relationships. In our making of political and historical maps, we seem to remain almost exclusively land-orientated. We unconsciously estimate the potential strength of a nation by the bulk of its homeland and consider its outer limits coterminous with land frontier. In the popular mind, Great Britain consists of its home islands plus a vague coterie of colonies widely separated by water and hence artificial in their attachment to the central community. On the other hand, the landmass of Russia is accepted as a natural unit. In consequence, the decline and fall of Britain has been gleefully anticipated for over a century and a half while Russia figured as the rising colossus of the East long before the coming of the Soviets added idealogical stimulus to the prophecy.

The form of the political map was originally determined by the land-minded Germans and French, who were primarily interested in such matters as exact locations of Alsatian or Savoyard or Silesian frontiers. Bodies of waters were not amenable to real estate transactions by peace conferences and consequently were left a neutral blue tho English and Spanish sea captains might have had private ideas on this subject! From the point-of-view of inter-

national law, with its three-mile limit, the concept of non-sovereignty remains strictly correct. Nevertheless, once an armed conflict begins, the latent dominion on the high seas promptly reasserts itself and control is as rigidly enforced as it was in the days when Venice was recognized as proprietor of the Adriatic and England enforced similar recognition in the North Sea. Indeed, until the 19th century, naive notions about rights of universal passage received short shrift even if a King George and a King Philip happened to be on temporary speaking terms with one another. A foreigner poaching in "Spanish waters" was a "pirate"

This highly important factor in the international situation is not depicted on historical maps and, because this is so, the role of seapower is usually improperly appreciated by the student and public. With the present-day emphasis on experimentation with new forms of maps, graphs, and pictorial devices for purpose of clarification, some mode of presenting this factor ought to be devised.

SEAPOWER IN THE ATLANTIC

Take the Atlantic Ocean as an obvious example. We study American History with the aid of continental maps of North America whose border of innocuous blue conveys no hint that the patches of coloring on land were usually created or modified by ultimate decisions on a far from neutral ocean. When Britain was master of the Atlantic during the 19th century, it was literally contiguous to every single state along the littoral of the Americas. One can recognize the importance of a Russia bordering on a dozen or more countries; it is much harder to see the Britain of 1880, a and was likely to be dealt with as such.
comparatively small island, as immediate neighbor to virtually the whole world. In the Atlantic, its influence on the fortunes of such neighbors was immense. Let five illustrations suffice: (1) By freeing the United States from the threat of jealous European intervention, British sea-power simplified American acquisition of its present territory. (2) It similarly balked any European reconquest of Spanish America at a time when we could scarcely have prevented it. (3) It snipped off the eighteenth-century French Empire in the Western Hemisphere. (4) By forcing an end to the slave trade, it reduced the Caribbean islands to unimportance and so quieted colonial rivalries there. (5) It brought such pressure to bear

on any would-be European conqueror that forcible unification of Europe was prevented. One might almost state as an historical law that any body of water serving as a highway will attract to itself a State-power intent on controlling its trade routes. Seizure of such mastery conferred more actual strength on the possessor than a whole series of shufflings of frontier posts in the homeland. This historical factor ought to be dramatized on some sort of historical map in such a fashion as to impress the student.

A Tentative Suggestion

What form the proposed maps should take would have to be decided by the geographer. A tentative suggestion would simply call for an extension of the color scheme of the various nations to the seas but in a lighter tint, at the same time elevating the land areas in order to differentiate clearly between land and sea. Whatever the means adopted, attention would be focused upon a particular body of water together with the impingement of its successive masters upon surrounding land areas. Zones of control would naturally have to be generalized since there would often be no precise outer limit of control. However, the problem of demarcation between rivals would normally not be serious because, in Whittlesey's words, "it is the nature of seapower to be absolute, as land power rarely is." (In cases of sustained rivalries, as in the 17th century Caribbean, presumably bands of color representing the various competitors would have to be used.) The areas of control would be determined by location of bases and harbors, by demonstrated superiority in battle over rivals, and by continued passage of trade in time of war with concomitant exclusion of the enemy. Only waters obviously dominated by some Power would be colored, the remainder being left in white, as is done with unoccupied regions of land. Small local domination by a weaker Power could be ignored. Nor would possession of territories adjoining the sea necessarily connote control of any sea area whatsoever. Such a map as that suggested would, of course, be intended to supplement the orthodox political map.

Historical Relationships Clarified

In addition to depicting international repercussions, as illustrated with the Atlantic, certain other important relationships would be established by such maps. For one thing, they would give

a more accurate picture of the relative power exercised by sea-powers in comparison with their contemporaries. One thinks of Venice, dwarfed by the Holy Roman Empire, France, and the Ottomans, yet ruler of much of the eastern Mediterranean and able to play an equal part in international politics. Athens, Carthage, Ancient and Ptolemaic Egypt, the Byzantine Empire, Norsemen, Saracens, East Indians, the Hansa League, Genoa, Aragon would all have their relative importance more correctly assessed. If this arrangement would seem to overbalance the scales, one may recall how most of our present titans are swollen by such virtually uninhabitable regions as the Sahara, the deep interior of China, the Amazon basin, central Australia, and the Arctic zones of Canada and Siberia.

Sea empires of past and present would no longer seem scattered haphazardly all over the globe. Present maps emphasize the artificiality of the union by associating them with local areas, failing to show their common dependence and origin as an encroachment from the sea. Most colonial areas with a native population are staked-out preserves having only slight connection with their local neighbors. British possessions are often grouped under such headings as "British Africa" and "British Europe"; more pertinent would be classifications under "British Indian Ocean" and "British Mediterranean." A map of the Indian Ocean showing the arch of British possessions rising from South Africa and Australia to the keystone of India would show the true imperial relationships in this part of the world. Again, some Frenchmen are speaking of a greater France in which the homeland is only "Metropolitan France" and its trans-Mediterranean possessions are destined for nationalization and incorporation into a great continental state on the model of the United States and the Soviet Union.

Certain coastal fringes show remarkable persistency in their political disassociation from their hinterland and an affiliation with a sometimes distant metropolis. The coast of the Black Sea was dominated in turn by Greek city-states, Rome, Constantinople, and Italian city-states. The east coast of the Baltic was usually an appendage of Scandinavian or German interests. The Vasa dynasty of Sweden ruled an oddly shaped state scattered along the east and south Baltic in addition to the homeland and explicable only by Swedish control of the sea. Africa's east coast was subject, with Portuguese interruptions, to the Arabs for over a millennium.

South Italy was Greek over two lengthy periods before and after Roman rule. Then, too, there are certain key areas which have had their destinies determined by their desirable location on the sea lanes. A certain sign of change in control of trading routes is the transfer of these points to a new flag.

Another category of these relationships concerns the sea as a barrier to invasion. Water in itself is small buffer to invasion; it is the force gathered upon the waters which counts. English history is the most prominent, but not the only example of this.

Finally, historical maps of the sea would serve to show how the present setup in colonial areas was created by a succession of traders-conquerors. The Indian Ocean is an excellent example of how the key to the present structure is provided by past sea-power. Vasco da Gama, in our texts, is still pictured as an explorer into the unknown, tho the Asiatics regarded him as a trespasser on an already lively scene. Bali, lone relic of ancient Hindu hegemony, and present-day Islam in the Indies, Molucca and coastal Africa remain as testimony to historical movements underway long before advent of the Europeans. The Portuguese took over Moslem trading routes only to lose them to the Dutch, but retained Mozambique, Goa, and Timor. The Dutch held the Cape, Mauritius, Ceylon, Malacca, East Indies and more, for a time, but subsided under British pressure. The Indies remain. French rivalry with the British in the 18th century left evidences in Reunion and Pondicherry. This is the British hour but, with the perspective of this panorama, one is likely to look at India, keystone of the ocean, and speculate about the future.

As long as the United States was only a continental nation, land-focussed maps were suited to our frame-of-mind. With our country becoming keenly aware of the implication of events on the shores of Asia and Africa, we need a clearer realization of geographical and historical forces. "The sea is not neutral; it is the ally of its friends." That statement may be trite, but it is true. Maps that ignore this fact distort and circumscribe our thinking.

THE USE OF THE FIELD TRIP IN TEACHING A PHASE OF THE STEEL INDUSTRY AT THE SENIOR HIGH LEVEL

R. W. FRANK

Washington High School, Massillon, Ohio

In recent times, we have been demanding more geography in our schools, and, particularly, in the senior high school. The war has made this demand a reality within our grasp. Parents are now convinced that we need more geography, but have we convinced the student?

NEED FOR EFFECTIVE TEACHING

Now, more than ever, we need to make the teaching of geography effective! This kind of teaching demands that it should be real, or become meaningless in the eyes of the student. He can see the factories, retail establishments, railroads, and other cultural or natural features of the environment in his community, but the varying natural and cultural features in other regions of the world must, in most cases, be secured thru reading and the study of maps, graphs, or pictures. The use of the local area can be used to stimulate the original interest, and the ensuing enthusiasm transferred to more distant places in the world.

One way to make geography real is to turn to the local community as a source of study. It is of paramount importance to recognize and comprehend the local geographic picture as fundamental in the understanding of the community. These same geographic recognitions and understandings will serve to develop a type of thinking which can be adapted, later, to a better conception and understanding of the world regional pattern.

Students entering high school bring a resentful attitude toward the subject. They remember the useless memorizing they had to do; the recalling of figures and facts; and the meager understanding they had after finishing the course. This attitude is a direct result of the shortcomings of courses in the teaching of geography. They dwell too much on generalizations rather than cases, and leave the student with abstract ideas but nothing tangible. Teachers are concerned with the materials in the text to such an extent that it becomes the sole factor in the experiences of the students. It would do well for teachers to look beyond the four walls of the

classroom and to teach more about things just outside their classroom window.

An industrial community, such as Massillon, offers a wealth of geographic teaching materials which can be utilized to stimulate interest. Altho not all communities can present an extensive list of features to observe, each has some features which could be used as a source of interest. An observation of the local landscape introduces the student to something real, something he has in part experienced, and this experience can be used to develop that type of organized thinking characteristic of the subject. Viewing an industrial process, or the transportation pattern, or the industrial pattern seems to interest students to look for "reasons why" which, ultimately, lead him to a study of natural environmental factors, cultural environmental factors, or factors involving the nature of peoples. Thus, we have reached our major aims in geography.

Preparation for the Trip

The following trip will illustrate how a visit to an industrial establishment may be made to function in achieving some of these major aims of geography teaching. However, just viewing an industrial process is not enough if we are to attain our objectives. Unless one has certain specific factors to look for, based on some past thinking, the trip is useless. The student must be prepared to look for certain things and to seek the answer to specific questions. To this end, we had made some study regarding the steel industry in its general setting, the coal regions, and their relationships, as well as the story of Mesabi and the Great Lakes in the movement of iron ore prior to the field trip.

In a class period preceding the visit, a list of things that we wanted to see was made, which included such items as the blast furnace, ore piles, coking plant, open hearths, and rolling mills. Next, a list of questions was made which included the following: How are the raw materials for manufacturing secured? How is the plant located with reference to lines of transportation? What is the outlet for the by-products? How is the furnace charged? Why is stainless steel production emphasized at Massillon? What markets does it supply? Why was it established at Massillon? These suggestions were made by the students and each made a copy for the trip.

The problem of conducting a large group of students on such a

trip has many aspects. If a teacher has a large number of students it is impossible to take them thru at the same time, but an arrangement can be made whereby a small representation from each class is chosen and they be made responsible to report their experiences to the rest of the group in post-trip class periods. This arrangement also works in a situation where the industrial management objects to large groups going thru the factory due to the risks from injury such as one might encounter in a steel mill. However, the objection that the mill management had to field trips by large groups during the war has now disappeared and they are making definite plans to build observing platforms at important or interesting places where large groups can view the operations with safety.

When classes are small, the above problems are erased so that the entire enrollment can be divided into smaller groups. In our particular case we had two groups of thirty each, which proved to be a very satisfactory number to conduct on such a trip.

Observations in the Field

The first step was to note the location of the steel mill which is along the west bank of the Tuscarawas River just south of the city limits. The railroads which serve the plant follow the flood plain of the stream. Two main lines, the Baltimore and Ohio, and Wheeling and Lake Erie, as well as a spur from the main line of the Pennsylvania, which was built to service the plant, use this natural roadway.

Our second step was to examine the workings of the blast furnace, where we watched the process of loading. There is a deep fascination in the workings of the car which carries raw materials to the top of the furnace. The ore comes, in great part, from the Mesabi range, but other ores are added from districts in Michigan which contain essential minerals used in making special steels. Coke for the furnace comes from their own coking plant which takes advantage of cheap Middle Appalachian coal brought in by the Wheeling or B. & O. lines on their return trip to Lake Erie ports for iron ore. These same lines also bring, in addition to the ore, limestone from the Lake Erie ports of Cleveland, Lorain, and Huron.

We observed the process of drawing off the molten metal which is carried in giant ladles to the nearby steel mill on the corporation's rail line. That part of the metal which cannot be

used at the time in the mill is poured into molds and stored in bins for future use. Recently, there has been a sharp drop in the production of the blast furnace due to the increased emphasis on stainless steel, and the tendency is toward the elimination of this phase of the industry from the Massillon plant of Republic Steel. Future supplies of steel will probably come from the Canton plant where electric steel is made, and which supplies part of the Massillon plant's needs now; and from scrap metals.

Before viewing the wonders of the open hearth, the group noted the storage bins containing the various minerals used in producing the high grade stainless steel. Among these minerals were tungsten, chrome, molly, nickel and vanadium. We were now ready for the most interesting part of the trip.

There is something awe-inspiring about the "open hearths" which provide a spectacle that no student will soon forget. We were fortunate to observe the loading of one of the furnaces and noted the various proportions of minerals that are thrown into produce a certain type of alloy steel. Then, in an adjacent furnace, a heat was poured into ladles, which in turn were hoisted, and the liquid metal poured into ingot molds. To experience this process is one of the real dramatizations in the field of geography.

We learned that the production of stainless steel was the life blood of the Massillon industry at the present time. The making of sheet steel used largely by the automobile industry has been, for the most part, transferred to the continuous strip mill built by Republic on the Cuyahoga River at Cleveland. Only surplus orders, or ones too small for the Cleveland plant to handle economically, are now made at Massillon. The real emphasis is on stainless steel, and there have been two expansions in recent years, with another in the process of construction, replacing the armor plate division. A great variety of products are now being made, including wire for trimmings on automobiles, and stainless steel sheets.

The final step in our trip was to follow an ingot thru the rolling mills. We watched its miraculous journey thru the rolls until it assumed, by means of reduction, the proportion of a thin rod of wire.

Classroom Synthesis of the Trip

However, the most important part of the trip came with the follow-up that was made in the ensuing class periods. The group carried out a question and answer program in which many of the questions left unanswered were discussed. They sought the answers

from readings, plant officials, and the local Chamber of Commerce. Then, each student prepared a paper summarizing the information on this phase of the industry and its relationships to the total picture. The concluding exercise was a map showing the sources of raw materials, lake ports, railroads, and similar industrial communities.

Conclusions

There were several indirect, but important results from this work. Interest had been stimulated to such an extent that a study was made of the industrial pattern of the entire community and the relationships shown on outline maps of the city. Second, the student extended this study procedure to include the larger pattern of the industry both nationally and internationally. Finally, they undertook individual projects to examine the geography of the steel industry in other communities. The benefits derived from a first hand study of the local area facilitated the adaptation of their thinking to larger and more remote areas.

There are several immediate results obtained by means of the field trip. First, an understanding of the local steel industry, its relation to the other activities of the community, and its importance to the life of Massillon. Also there is an understanding of the relationship of the pattern of the local steel industry to that of the larger steel pattern of the United States, and of the world. Next, there is acquired an intimate knowledge of the students' home community, the pattern of its functions, and an awareness of the problems of that community, together, with an appreciation of why they exist, as well as a partial background for their solution. Third, there is developed a concept that geography is not something that exists on distant horizons, but is to be found in their own backyard.

In addition to these results, there are some ulterior benefits to be derived from the field trip as a supplement to regular classroom work. According to certain modern educators, "the direct and concrete first-hand experience offered thru educational trips seems to speed up teaching and make it easier. Also, it tends to foster quickened interest, clearer thinking and greater retention of material." One of the big causes of failure in geography is the lack of concrete geographical experiences. Students, who do not possess a fair knowledge of home geography, or possessing it, do not use it to acquire an understanding of world relationships, are more likely to fail. Finally, the experiences derived from the trip are an aid to future travel.

A GEOGRAPHY CHORAL-SPEAKING PROJECT

HAZEL G. HANDEL
Painesville, Ohio

Early in the first semester of the school year I urged 7B geography pupils to use their spare time writing poetry on Latin American lands. At the end of each unit of study we discussed the possibilities that unit had suggested for poetic attempts. Occasionally we read a little poetry in class, poetry on foreign lands and peoples, poetry on deserts, mountains, rivers, and poetry on animals and plants. In talking of how to write poetry, pupils pointed out that it might be rhymed or unrhymed, and that such devices as repetition of words and of sounds and the use of certain words to suggest pictures would be helpful. Each discussion brought to our poetry file two or three more finished poems, poems of every sort and of varied worth. We read some of these from time to time without telling the name of the author; most poems, in fact, were at first unsigned. At the conclusion of the semester's geography work the poetry file was bulging and students were asking to try such writing on Africa, too.

The second semester's work on the project began with the selection of class committees. These pupils first of all sorted the poems, selecting those they considered best from the standpoint of poetry as well as from the standpoint of geography. Before the final elimination took place some committee members decided that we ought to settle on just a few regions in Latin America and build our program around those few. The regions decided on, naturally, were determined by the abundance and quality of poems available on certain ones. Eventually we settled on these: Amazonia, Coffee Lands of East Central Brazil, the Argentine Pampas, the Nitrate Desert of North Chile, the High Plateau of Bolivia, the Caribbean, and the country of Mexico. We wanted a choral-speaking group of approximately thirty to present the poems as an assembly program. In addition to the poetry some pupils wanted the stage to suggest the lands we were portraying. There was a Mexican background available that had been used once before, so it was decided to use this for a start. To this idea the committee added that of using a display table exhibiting handicraft work of Latin American peoples, together with the use of a very large picture map on which our regions would stand out prominently. Several class members wanted some boys and girls in costume, one or two for each region;

we decided to have an Indian rubber gatherer, two girls to represent Italian coffee pickers, a Pampas cowboy or gaucho, a desert miner, two Indian women of the High Plateau, a Caribbean pirate, and two Mexican senoritas.

Members of the choral-speaking group were chosen on the basis of interest and free time, and to this group were added the characters who were to be in costume in the front row of the bleachers. A boy volunteered to make the large picture map and began work on it. A very capable girl was chosen to announce each group of poems, and she started her work of writing the introductions to be used. Since she was a good rhymster and had written one of our favorite poems, someone got the notion that she might write the announcing and introductions in poetry and she agreed to try. She did very well at this, and we were delighted to hear her poems from time to time. She started our program with:

The seven A geographers,
In a fit of work,
Decided to be composers
And have a poetic quirk.

So in this assembly we give you,
For Pan American Day,
Some poetry, hoping to interest you
In the South American way.

On Amazonia she wrote:

Of the hot, damp Amazon,
Are the first poems on the list,
Where latex is tapped from rubber trees
And few white people exist.

On the High Plateau we thought this good geography:

Now on the list is printed Peru
Besides Ecuador and Bolivia, too;
All these are combined to make a plateau,
Where llamas bear burdens and few trees can grow.

This on Mexico we enjoyed:

Last, but not least, is Mexico,
Land of sombrero and bean,
Also of spinach and carrot and cabbage,
Of tamale and just plain beet green.

Even the acknowledgement to the pupil authors was done in poetry.

In the meantime the thirty verse choir members were working together in groups as they were able to, striving to speak with

clarity and good expression, and then coaching each other in becoming word perfect. Here and there they could be heard saying in unison: "I'd hate to be a rubber gatherer," "I wave my fan on the Amazon to stir the gentle breezes," "This is a fazenda, a coffee fazenda," "The jungle creeps, the jungle crawls," "Down south in the Pampas," "Have you ever been to Mexico?" and countless other lines. Quite early in the rehearsals the group was divided into two sides plus a chorus of four. The sides alternated in speaking from line to line or stanza to stanza. Gradually we added a few gestures for emphasis and amusement.

By the middle of the second semester we were ready. Costumes had been collected and tried. Display articles for the table were at hand. The large map was finished, with its pictures all painted. Two auditorium rehearsals were held, with everybody and everything in place. Then we put on the Pan American program. I directed from the orchestra pit. As each region was introduced by our poetic announcer, she pointed to our large picture map, showing the location. Then the verse choir proceeded to give the poems chosen on that region. The boys and girls got infinite satisfaction out of knowing that there is poetry in geography and out of hearing their own and friends' poems recited by the choir. As each stanza such as this was being given there was someone on the stage or in the audience saying to himself, "I wrote that."

> Chile has a desert
> Like Africa, United States, and Peru,
> But, unlike the others,
> It contains nitrate, too.

Except for the initial idea and a bit of urging now and then on my part, this was entirely an all-pupil Pan American program. It was a consumer of spare time and of talent and initiative. It was good geography. It was fun.

THE NATIONAL COUNCIL AT WORK

The Program of the Annual Meeting

The program for the Columbus meeting reflects the interests of our members, as indicated by the returned questionnaires last spring. In addition, it is based on the fact that the National Council of Geography Teachers is a working organization with responsibility in all the aspects of geography teaching, and all levels of geography teaching.

The round table sessions of Friday morning deal with topics in which members indicated special interest, and with activities now being carried on by the Council or proposed for future projects. Some of the meetings are open meetings of committees where the committee members will give information about their work and ask for helpful reactions from others. These discussion meetings will not be of the type where the discussion wanders on until the close of the hour, with perhaps a few crumbs of inspiration the only outcome. Each chairman plans some definite accomplishment that will be a contribution to the program of activity during the next year.

Geographers Like to Attend Meetings

Returns from the questionnaire sent to members last spring show that over half of our membership has attended meetings of the National Council, or the geography section of the National Education Association, or the geography sections of the National Council for the Social Studies. Others wrote in the names of other meetings not listed on the questionnaire. Seventy-one people among those answering have attended more than five annual meetings of the National Council.

Many of us teach in schools where few have equal enthusiasm for geography. We like to gather where we can talk geography and listen to geography for several days. We make new friends and renew old acquaintances among others interested in geography. We meet those whose names we know as authors of books we use in study and teaching. We are a friendly group. Do not let the fear of feeling a stranger keep you away. You will be a part of the group before the end of the first day. If you cannot join us at Columbus, attend if possible one of the other meetings where groups of geographers gather to discuss their common problems.

Make Reservations Early

Hotel reservations should be made directly with the Neil House, our headquarters in Columbus. Rates were published in the Journal of May, 1946.

Make your reservations for the annual dinner, Friday night, and for the luncheon meetings held on Saturday, with the Secretary, Clyde F. Kohn, Department of Geography, Northwestern, University, Evanston, Illinois. Because of problems we all know, reservations must be in his hand before December 15. The price of the dinner is $3.50 and that of the luncheon is $2.50. Tax and tip are included in each case. Indicate which luncheon you wish to attend.

Officers of the Kentucky Council

The president of the Kentucky Council is Mr. F. L. Edwards, Principal of North Warren High School, Smith Grove, and the Secretary-Treasurer is Miss Mary Lawrence, Geography Department, Bowling Green High School, Bowling Green. Miss Catherine L. Braun, State Teachers College, Morehead, serves as state director.

Katheryne Thomas Whittemore, *President*

ANNUAL MEETING NATIONAL COUNCIL OF GEOGRAPHY TEACHERS

Neil House, Columbus, Ohio, December 27-28, 1946

PRELIMINARY PROGRAM

Friday Morning, December 27

9:30 General Session: The Challenge

Greetings to the National Council. Mary E. Case, President of the Ohio Council of Geography Teachers, Kensington School, Rocky River, Ohio

Response. Thomas F. Barton, Second Vice-President of the National Council, Southern Illinois Normal University, Carbondale, Illinois

The New Meaning of Geography in Education. Wallace W. Atwood, Worcester, Mass.

A Message to the Geography Teachers of America. Liu En-lan, Gin-ling College, Nanking, China

10:45 Round Table Discussions: The National Council at Work

A. *Geographic Education for World Understanding.* An open meeting of the National Council Committee on Geographic Education for World Understanding.
Chairman: Sidman P. Poole, University of Virginia, Charlottesville, Virginia
Secretary: Mrs. Erna Grassmuck Gilland, California, Pennsylvania

B. *What Program to Further Out-of-Door Education Should be Undertaken by the National Council?*
Chairman: Sidney E. Ekblaw, University of Kansas City, Kansas City, Missouri
Secretary: Harland J. Lewis, Western Pennsylvania School for the Deaf, Edgewood, Pittsburgh

C. *How can Geography be Made More Functional in Everyday Life?*
Chairman: Ruth Linder, University of Wyoming, Laramie
Secretary: Ernest M. Harwood, War Department, Washington

D. *National Council Activities in Aviation Geography.* An open meeting of the Committee on Aviation Geography.
Chairman: Richard L. Tuthill, University of Kentucky, Lexington

E. *Have We Satisfactory Motion Pictures for Teaching Geography?*
Chairman: Floyd F. Cunningham, State Teachers College, Florence, Alabama
Secretary: Villa B. Smith, John Hay High School, Cleveland, Ohio

F. *What Standards Should Be Set for Wall Maps?*
Chairman: To be announced.
Secretary: Mamie L. Anderzhon, Irving School, Oak Park, Illinois

Friday Afternoon, December 27

2:00 General Session: Teaching Geography—Problems, Materials, Experiences

Problems and Experiences in Teaching Geography to High School Seniors. Mary Viola Phillips, New Kensington Public Schools, New Kensington, Pennsylvania

G. I. Geography in England. Earl B. Shaw, State Teachers College, Worcester, Mass.

Looking Forward in Educational Geography. Charles C. Colby, University of Chicago, Chicago, Illinois.

The Problem of Supplementary and Recreatory Materials in Geography. Zoe A. Thralls, University of Pittsburgh, Pittsburgh, Pennsylvania

Problems and Materials for Geographic Studies in Industrial Geography. Joseph A. Russell, Syracuse University, Syracuse, New York

Meeting the Problem of Materials for Resource-Use Education in Alabama. Lillian Worley, Alabama College, Montavallo, Alabama

Friday Evening, December 27

6:30 Annual Dinner

The Population Prospect in Relation to the World Agricultural Resources. Oliver E. Baker, University of Maryland, Baltimore, Maryland

Reception in honor of the recipients of the Distinguished Service Award

Saturday Morning, December 28

9:00 General Session: The National Council at Work

Reports from the Friday Round Table Meetings

10:00 General Session: The Curriculum in Geography

World Events and Their Implications for the Geography Curriculum. Eugene Van Cleef, The Ohio State University, Columbus, Ohio

Developments in the Field of Geography and Their Implications for the Geography Curriculum. Preston E. James, Syracuse University, Syracuse, New York

Educational Trends and Their Implications for the Geography Curriculum. Clarence W. Olmstead, University of Wisconsin, Madison, Wisconsin

A City Builds a Curriculum. Clyde F. Kohn, Northwestern University, Evanston, Ill.

Saturday Noon, December 28

12:15 Luncheon Meetings: The Geography Curriculum at Various Levels

I. Geography in the Elemenary School

Chairman: Ruth Hoffman, George Peabody College for Teachers, Nashville, Tenn.

Secretary: Evelyn G. Weston, Mason School, Akron, Ohio

What Shall We Teach in the Elementary Schools? J. Russell Smith, Emeritus Professor of Economic Geography, Columbia University

II. Geography in the High School

Chairman: Ralph S. Harris, Westport High School, Kansas City, Missouri

Secretary: Elizabeth S. Lichton, Waller High School, Chicago, Illinois

Contributions of High School Geography to Education for Citizenship. Ada M. Shawkey, Aliquippa High School, Aliquippa, Pennsylvania

Geography in the Work of the United States Office of Education. Howard R. Anderson, Specialist in Social Sciences, United States Office of Education, Washington, D.C.

III. Geography in the College

Chairman: Nels A. Bengtson, University of Nebraska, Lincoln

Secretary: Elizabeth Eiselen, Wellesley College, Wellesley, Massachusetts

Post-War Trends in American Colleges and Some Implications for Geography Robert B. Hall, University of Michigan, Ann Arbor, Michigan

Discussion. Loyal Durand, Jr., University of Tennessee, Knoxville

Saturday Afternoon, December 28

2:00 General Session: Organization for Work

Presentation of a Proposed New Constitution

The Year 1946, An Accounting. Reports from officers and committee chairmen

The National Council of Geography Teachers as a Working Organization. Katheryne Thomas Whittemore, New York State College for Teachers at Buffalo

EDITORIAL NOTES AND NEWS

DR. CLARENCE VINGE, who received his doctorate degree from the University of Wisconsin in May, 1946, has joined the staff of the Geography and Geology Department at the Southern Illinois Normal University. During the past summer Dr. Vinge was employed in the Quartermaster Corps of the War Department in Washington, D.C.

If you have a water-softener in your home you may be interested to know that it contains a water-softening medium probably processed from greensand marl obtained from New Jersey. This marl extends diagonally across the state from Sandy Hook to Salem. The deposits usually vary in depth from 20 to 40 feet, with little or no overburden of top soil. The marl originally was dug and sold as a fertilizer. Competition with other fertilizers practically forced it off the market. Then came the discovery that greensand marl when processed will yield an excellent water-softening medium, commonly known as zeolite. Hard water passed thru the tank containing the zeolite is freed from the calcium and magnesium salts that make water hard. An ordinary household tank yields a week's supply of soft water. Regeneration of the zeolite is then effected by a supply of brine transferred to the top of the zeolite tank. Thousands of water softeners are manufactured for use in homes and industrial plants. Typical of the latter are laundries, beauty parlors, canneries, tanneries, and plants making rayon. One of the latter has an installation containing a million pounds of Jersey greensand zeolite which has a daily capacity of softening over 10,000,000 gallons of water. The development of zeolite as well as other water-softeners is likely to be increased as more homes and industries demand soft water. Paralleling this increase will be the expansion of the factories manufacturing the equipment and the agencies servicing the household or industrial softening plants.

It is reported that the International Ice Patrol is set to resume its business of spying out icebergs in the North Atlantic and reporting same to shippers. Its work was of necessity stopped in the last war. The airplane and radar will play a big part in assisting the patrol vessels in scouting the bergs and thus enchancing the safety of the great shipping lanes across the North Atlantic.

The American fishing industry produces annually about 4,500,000,000 pounds of fish. Two-thirds of this weight serves as human food. The remainder becomes animal food, fertilizers, wearing apparel, medicines, and other by-products. Government authorities estimate the total capitalized value of United States fishery resources to be $5,855,000,000.

Mechanized production is one of the outstanding characteristics of California's rice production according to the U. S. Department of Agriculture. Typical of this mechanization is the airplane seeding of rice on water, harvesting by combine-drier method, and bulk handling of the rice.

A report from the U. S. Weather Bureau indicates that you can save a ton of coal in one winter if your modern house has 100 square feet of south-facing windows. The report is based on calculations made at Blue Hill Observatory of Harvard University. You can eliminate most of this solar heating in summer by overhangs properly set to keep out the high noonday sun of summer.

GEOGRAPHICAL PUBLICATIONS

Warren Thompson. **Population and Peace in the Pacific,** University of Chicago Press, Chicago, 1946, pp. 397, bibliography and index. $3.75.

This book discusses the resources and population problems of the Pacific area with most attention to Japan, China, India and the colonies of southeast Asia. The economic pressure that stems from rapidly increasing populations in the Orient is emphasized. The author repeatedly points out that the treatment of underprivileged peoples must be corrected by the Great Powers or run the chance of the underdogs risking war in an effort to remove their handicaps.

From 1931 to 1941 the population of India increased by 50,000,000 and over one billion persons now live in South and East Asia. Today there is no emigration outlet for these peoples that is comparable to the Americas that were open to Europeans during the nineteenth century, when the western peoples enjoyed a high rate of population increase. Apparently the decrease in birthrate in Europe and North America in our generation coincides with large increases in population of the Orient. In a population as great as that in South and East Asia there is little benefit thru emigration, since the temporary relief of pressure on subsistence reduces the death rate so that the gaps left by emigrants are quickly filled. Since 75-85 per cent of Asiatic peoples are farmers with an already low standard of living, a rapid growth of population intensifies the problems of securing food, clothing and shelter. Only in Japan has industrialization yet cared for large numbers of people and whether Japan's exports of manufactures will continue at a high rate after the war is problematical. The author believes that when the poverty stricken Asiatic peasants learn more about the world, and the more abundant life elsewhere, that they will demand: (1) more of a share in the minerals and other wealth of the colonies, (2) the right to settle in Borneo and New Guinea or Australia now closed to them, and (3) if basic injustices are not remedied a recourse to force is probable.

The native population of Oceania has declined over one-half, and has been replaced in part by whites and Orientals in Hawaii, Indians in Fiji, and Japanese in their mandated islands. New Zealand is dominantly British but who have freely intermarried with the native Maoris. In New Guinea and most tropical islands plantations managed by Europeans and employing native or Oriental labor produce most exports. Native farming is for subsistence and the plantations import most of their food requirements. Tropical Australia uses white labor in the cane fields but the sugar industry is protected by a high tariff. In general, tropical Australia, New Guinea, Borneo and many smaller islands have small density of population compared to the Asiatic mainland, and the prevention of Oriental immigration to these empty lands will prove of increasing difficulty.

The author points out that the insufficiency of resources in Japan requires the import of raw materials, their manufacture and export, otherwise Japan would be one of the poorest nations and its people would be reduced to a low subsistence level. Thompson says that deprived of its colonies Japan will be too weak for aggression and that reeducation and control over imports needed for armaments will lessen the need for continued military occupation.

In China the author estimates that as soon as a few sanitary, economic and political changes are made that the country will have an excess of births over deaths of 40-60 million in each decade. Improvements in flood control, irrigation, farm practices and extension of tilled areas along with increased industrialization will care for some increase in population. However, "it will not be any kindness to help China improve its agriculture and develop its industry merely to find that it has twice its present

population existing at the low level of living now prevailing." Help to China "should be made contingent on the willingness of the Chinese leaders to show their people the need for voluntary control of population growth."

In the case of India continued growth of its population of 400 million can be expected for several generations altho the author believes that ultimately it will fall in line with the present small rate of increase or static conditions in Europe and the United States. Since opportunities for expansion of farming in India are moderate, an increase in manufacturing is relied upon to employ much of the gain in population. Much the same situation holds true for Java. In Burma, Siam, Indo China, the Philippines, Borneo and New Guinea millions of more people can settle on the land but this would be far from enough to care for all the expected increase in China and India in the next fifty years. A change in the colonial system to allow greater opportunities for natives would probably permit a larger population to exist by subsistence agriculture.

The general conclusion of the author is that a lowering of the birthrate is the only real solution of the population problem, and while this will probably ultimately happen, he thinks that continued excess of births over deaths will last for several decades into the future. The author is opposed to the use of force by the United States to maintain the "colonial system" for the benefit of Europeans. Thompson states that to direct and control the Asiatics, westerners must abandon economic and political imperialism. Unless the United States is careful we may find ourselves making a settlement that will lead to war and not peace.

"Population and Peace in the Pacific" is a very thought provoking work that can be studied with profit by geographers, economists and those interested in international relations everywhere. The reviewer strongly recommends it.

Otis W. Freeman

Eastern Washington College of Education

Treatment of Asia in American Textbooks, American Council, Institute of Pacific Relations, New York, April, 1946.

American teachers of geography have long been aware of the paucity of knowledge concerning Modern Asia among average Americans. This fault has been due in part to the greater interest in European problems and in our own dynamic economy. The efforts to understand the increasingly complicated civilization in which they live have severely taxed the capacities of our students. However, from the time of the bombing of Pearl Harbor, on thru the war and probably long in the future, Americans will be facing the Pacific much more than they have in the past. To test the abilities of modern education to equip American students for this new prospect a survey has been made of one phase of education—the textbook. Under the direction of the Committee on Asiatic Studies of the American Council on Education and the American Council of the Institute of Pacific Relations, four social science teachers have made an exhaustive study of the treatment of Asia in recent texts. Dr. Howard E. Wilson guided their efforts and wrote the introduction to the report they prepared. Far Eastern experts, among them Dr. George B Cressey, reviewed the reports in mimeographed form before they were published.

The survey covered texts for elementary and secondary school courses in geography, world history, United States history, civics and modern problems. The survey revealed some interesting facts. Tho elementary geography texts "are probably most nearly adequate in their allocation of space to the Asiatic areas," the other texts "are glaringly deficient in their recognition of Asiatic topics." The data which are presented in all the textbooks are "not as wisely selected as they should be, or as evenly balanced." There

were other general criticisms: Asiatic references are too often scattered so that the student has no comprehension of Asiatic problems; many texts have a certain degree of imperialistic bias; Asiatic developments are treated as exotic to world affairs; pictorial aids and maps are used too sparingly.

Tho the three reports on the associated fields are of interest, geography teachers should be especially concerned with the report of Karl Wernert (Brown and Nichols School, Cambridge, Massachusetts) on "The Far East in Geography Textbooks." The report covers forty-six texts, all of which were either published or revised after 1939. On the basis of a line count it is revealed that the discussion of the Far East averages 5.7 per cent in the elementary books, 7.9 per cent in the junior high school books and 8.8 per cent in senior high school books. Of the countries China receives the most space, ranging from 40 per cent in the elementary texts to 30 per cent in the senior high school texts; Japan and India each have about one-quarter of the space; Southeast Asia has the least treatment. In the elementary texts the physical description receives 18.7 per cent of the space devoted to the Far East, agriculture 21.9 per cent, other cultural features in the landscape 26.3 per cent, historical and cultural background material 23.6 per cent, foreign trade 6.8 per cent and future prospects 2.6 per cent. Mr. Wernert wrongly criticizes the junior and senior high school texts for considering "only the economic aspects of geography." This criticism should be directed at the curricular demands for economic geography on those levels. The discussion of the treatment of these categories in the textbooks for the different levels brings out some of the outstanding deficiencies.

The objective and impersonal recommendations of the report will make a real contribution to the better writing and publishing of geography and other textbooks. To cut the inevitable time lag before improvements appear in the texts, teachers of geography may be interested in some of Mr. Wernerts recommendations: pictorial and statistical material should be brought up-to-date; Asiatic countries should be treated together regardless of their political ties; attitudes of western superiority should be avoided; more time should be spent on physical description to provide better background; the relationship between the physical landscape, the cultural landscape and the historical and cultural background should be emphasized; and more maps of all kinds should be used. Geography teachers will want to put these recommendations into effect immediately in their teaching for they recognize along with the writers of the reports that "the areas of the East are inescapable influences helping to shape the course of the future."

SHANNON MCCUNE

The Ohio State University

The JOURNAL *of* GEOGRAPHY

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Dr. McConnell is Professor of Geography at Miami University. He is well known to teachers thruout the country thru his elementary texts, atlas, workbooks, and numerous contributions to geographic education.

Cartography in 1946. By Erwin Raisz 347

Dr. Raisz of the Institute of Geographical Exploration, Harvard University, is an authority on cartography and author of the text, "General Cartography." He is keenly interested in geographic education and has made several contributions to the JOURNAL. His articles, "The Analemma" appeared in March, 1941, "Our Lopsided Earth" in March, 1944, and "Landform, Landscape, Land-Use, and Land-Type Maps," in March, 1946.

Geography Reconverts. By H. Thompson Straw 352

Dr. Straw is Professor of Geography at Western Michigan College, Kalamazoo, Michigan. During most of the war period he served in Washington, D.C. where he was assigned as Chief, Cartographic Section, Historical Branch, G-2. His recent article, "A Practical Approach to Postwar Geography" appeared in the April, 1945 issue of the JOURNAL.

The Span of a Continent. By O. Orland Maxfield 360

Mr. Maxfield is Instructor in Geography at the University of Arkansas. His special interest is urban geography.

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